

1330.0 - Education News, October 2011

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Education News - October, 2011

This newsletter highlights the latest curriculum related teaching resources, student activities and statistical tools that have been developed by ABS Education Services as well as other ABS resources that are useful for schools.

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A word from the editor

We've been working on the revamp of the Education Services webpages for quite a few months now and I'm pleased to say that it's almost complete. Soon you will see a new homepage that has six colour coded sections – blue for 'About Education Services', green for 'Classroom Activities' and 'Teacher Resources', red for 'Data', purple for 'Quick Links' and orange for 'ABS publications'. Those of you who have used the updated CensusAtSchool homepage will recognise the format.

We've also reduced the number of layers in our webpages so you don't have to dig around to find what you're looking for. Drop us an email or call and tell us what you think.

Sadly, this will be my last edition of Education News as I'm moving on from the ABS. I've enjoyed bringing you our latest services and thanks for your readership.

Andrea MacGlashan.

1. CensusAtSchool News – 2011 population information



The 2011 data tables for CensusAtSchool are now available on the CensusAtSchool homepage. You'll find links to the National summary tables and National time series under the red 'Data' section.

National summary tables

- More than half of students in South Australia travel to school by car making them the most frequent users of cars as school transport in Australia.
- Females are much more likely to often use the internet for Twitter and Facebook than males.



- A larger percentage of primary school students receive money for chores than high school students.

This information and much more such as height, year level of males and females, internet use of males and females and percentage of students who take action to conserve the environment by state/territory can be found in the CensusAtSchool national summary tables. The tables give a picture of the 25 307 students who completed the CensusAtSchool questionnaire in 2011. They function as CensusAtSchool population statistics. You can take a random sample and compare your sample to the CensusAtSchool population statistics or survey your class and compare the results with the CensusAtSchool population.

National time series tables

Since 2006, students access to the internet at home has changed dramatically. The number of students with broadband connections has increased 25% and dial up access has decreased 25%. Students with no internet access has decreased 9% and other access such as on a mobile phone has increased 9%.

This information and more such as languages spoken at home, favourite takeaway food, and importance of environmental and social issues are in the CensusAtSchool national time series. These tables show CensusAtSchool statistics collected from over 204 000 students who participated in 2006, 2008, 2010 and 2011 questionnaires. You can compare data over time to see how Australian school students are changing.

Don't forget that there are many ideas for incorporating CensusAtSchool into your curriculum available on our website. As well as QuickC@S lessons that take a single lesson to complete and reinforce one concept, there are also C@SMA activities which have answer sheets and marking rubrics so you can use them for assessment.

We are also happy to receive your ideas to add to our Teacher Submitted Activities pages.

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2. An Idea for the Humanities Classroom – M&Ms and populations

Understanding patterns is a fundamental concept for geographers. Settlements evolve over time and usually reflect natural factors such as access to a water supply, fertile soils, moderate temperatures, amount of rainfall and a ready access to mineral resources.

Look at the pictures below and imagine each individual M&M represents a settlement. What factors could have contributed to the patterns of these settlements? Where in the world might these patterns occur?



An even distribution indicates a settlement in a fertile plain.



A radial pattern might indicate a settlement that follows railway routes.



Why is there no settlement in the SE corner?



A linear pattern could indicate a river valley.



This pattern might indicate a settlement that is avoiding a flood plane or one that is in a steep sided glaciated valley.

Australia's population distribution and density can be investigated in this activity. Ask your students to imagine that the square of paper represents a square kilometre then get them to guess the population density for Australia and represent it with their M&Ms.

You can find population graphs of Australia on the ABS website.

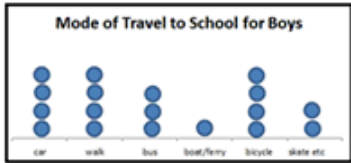
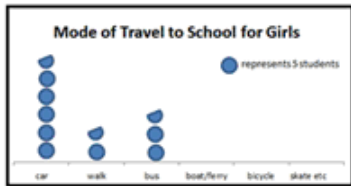
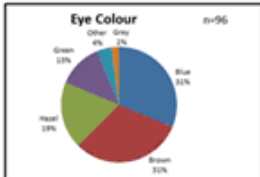
We would love to hear feedback from anyone who finds the activity useful or has ideas for improving it.

Do you have a classroom idea that uses ABS data or ABS Education products? Let us know at education@abs.gov.au and we can share it with schools around Australia.

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3. What Graph or Display to Use When

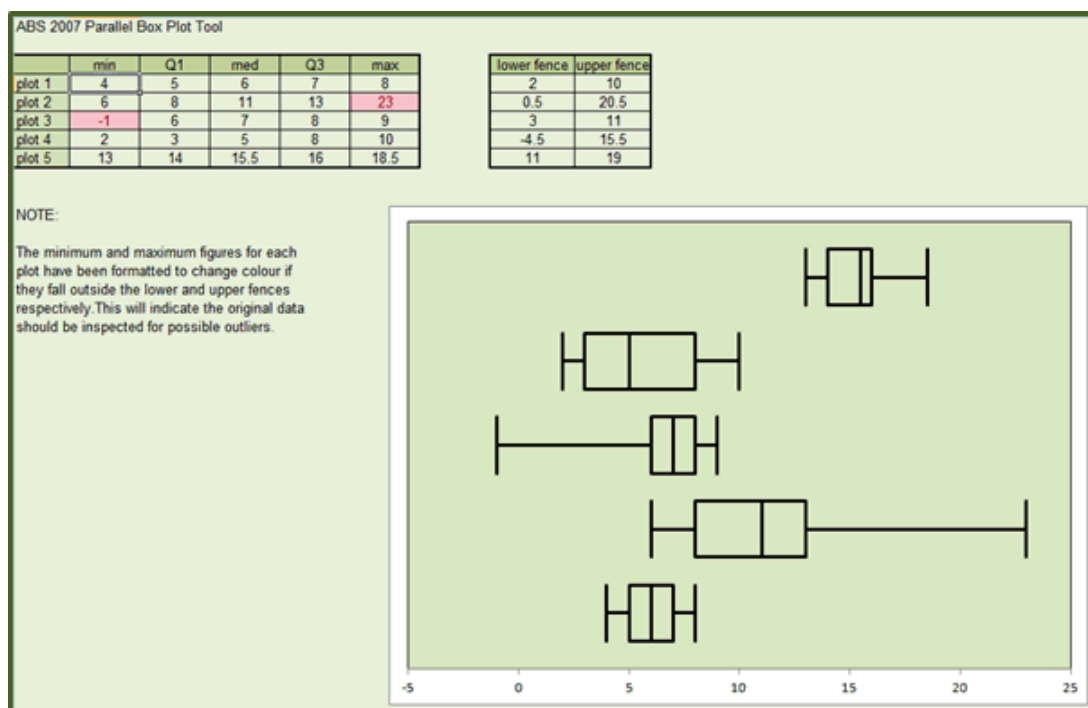
The ability to create statistical displays with and without digital technologies is a requirement in the Australian curriculum from Year 3 upwards. With this in mind, we have developed a document detailing the graphs and displays outlined in the Statistics and Probability strand of the Mathematics curriculum. It includes examples of graphs and tables with their appropriate year level and general advice on their features including the advantages and disadvantages of each. You can download this document from Education Service's homepage.

What Graph or Display to Use When			Page 4 of 11	
Dot Plots	Year level	Example of Chart	Features and general advice	Advantages and Disadvantages
One to one correspondence Used for categorical and discrete numerical data.	5, 7 10 Compare shapes of boxplots to corresponding histograms and dot plots		<ul style="list-style-type: none"> Proportional dots Title and axes labels 	<ul style="list-style-type: none"> Quick for small quantities ✓ No need for frequency axis Easy to get a visual sense of comparison Need to count for exact total ✗
Many to one correspondence Used for categorical and discrete numerical data. NB Can use crosses etc.	6		<ul style="list-style-type: none"> Proportional dots Title and axes labels Key 	<ul style="list-style-type: none"> Quick to construct ✓ No need for frequency axis Useful for large quantities Can be hard to quantify part dots ✗
Pie Graphs	Year level	Example of Chart	Features and general advice	Advantages and Disadvantages
Used for categorical and discrete numerical data	(6 Elaboration)	 <div> <p>NOTE: Yr 6 (Elaboration) "identifying potentially misleading data representations such as...pie charts in which the whole pie does not represent the entire population about which the claims are made"</p> </div>	<ul style="list-style-type: none"> Title Clear labels and proportional sectors Key if necessary % or number labels Total Segments usually ordered by size 	<ul style="list-style-type: none"> Useful to compare parts to the whole ✓ Requires skill to draw accurately ✗ Not useful for large number of categories

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4. Box and Whisker Plots in Excel

Box and Whisker plots are used to examine and compare data distributions. However, they are not part of the suite of Excel charts and are very difficult to draw using this program. We've developed a tool that allows up to five parallel box and whisker plots to be drawn in Excel 2007.



To generate the plots, students enter their 5 figure summary statistics into the table in the top left of the sheet. As well as automatically drawing the plots, Excel calculates the upper and lower fences, and conditional formatting allows maximum and minimum values beyond the fences to be easily identified. You could make the process even easier by teaching your students how to calculate the min, Q₁, med, Q₃ and max values of a list using formulae in Excel. Your students can also format and print a copy of their chart in a printer friendly worksheet.

Access the file by going to the Education Services homepage and clicking on "Parallel Box and Whisker Tool".

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5. ABS Resources for Teachers - New Geography activities

We have added a new suite of Geography activities to our webpages. Quick Geography (GeoQ) activities can be completed in less than one period and are based around a graphic or table of data selected from ABS publications.

Activities GeoQ 01-08 investigate population and cover concepts such as distribution, age structure and demographic transition. Through the questions, activities and extension material, your students will increase their ability to interpret graphs and understanding of related theories. Generally, the activities don't rely on access to the internet and they're Word documents so you can adapt them to suit your needs.

GeoQ 06B—Drawing population pyramids with Excel is so much easier than by hand. All your students have to do is set up a frequency table and flip an axis.

Fig. 1 Frequency Table

Years	%Males	Years	%Female
0-4	3.4%	0-4	3.2%
5-9	3.1%	5-9	3.0%
10-14	3.2%	10-14	3.1%
15-19	3.5%	15-19	3.3%
20-24	3.8%	20-24	3.6%
25-29	3.8%	25-29	3.7%
30-34	3.4%	30-34	3.4%

Fig. 2 Chart before axis is reversed

35–39	3.6%	35–39	3.6%
40–44	3.5%	40–44	3.5%
45–49	3.5%	45–49	3.6%
50–54	3.3%	50–54	3.3%
55–59	2.9%	55–59	3.0%
60–64	2.7%	60–64	2.7%
65–69	2.0%	65–69	2.1%
70–74	1.5%	70–74	1.6%
75–79	1.1%	75–79	1.3%
80–84	0.8%	80–84	1.1%
85–89	0.4%	85–89	0.8%
90+	0.2%	90+	0.4%

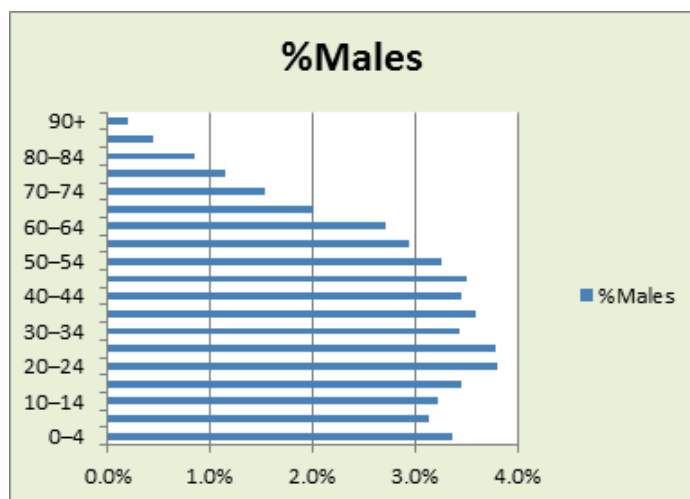


Fig. 3 Select 'Values in reverse order' from the Format Axis box

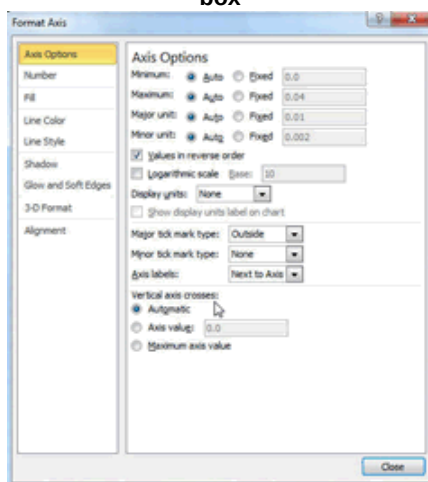


Fig. 4 Chart for males with axis reversed

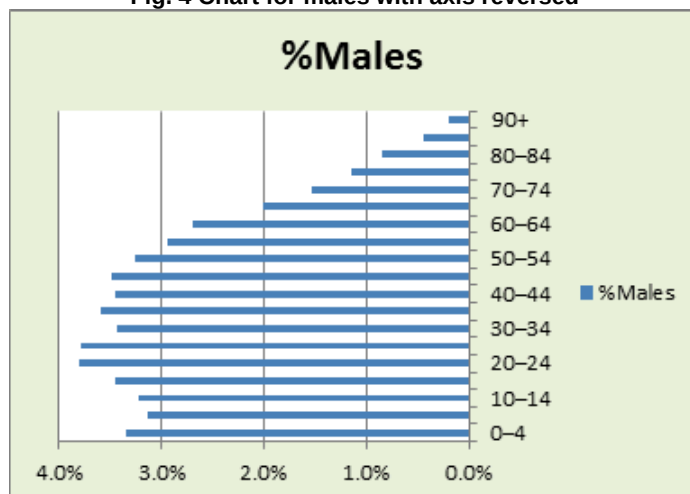


Fig. 5 Finished Chart



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6. Conferences



Jean, Mary-Anne and I attended the Maths Association of New South Wales conference in



September. The conference was held at the Novotel in Wollongong—a pretty town about an hour's drive south of Sydney.

I staffed the CensusAtSchool stand and gave away many, many, many showbags full of our resources and merchandise. For the first half of the first day, we were coaxing people to come and have a look at what we had to offer. But once word got out that we were giving away stuff—and cool stuff at that, people were a bit more eager. In fact, we had teachers bringing their colleagues back to the stand so they could get showbags too.

One of the most popular items on our stand was the new range of stickers for teachers to give to students. A couple of teachers even wanted to know if they could buy extra on top of those that we'd given them. The other sought after items were the key ring tape measures.

Both Mary-Anne and Jean presented at the conference and their sessions were well attended. Mary-Anne took teachers on a tour of the CensusAtSchool website and showed them how to register for a C@S Questionnaire, take a random sample and incorporate C@S data into classroom lessons. Jean took upper secondary teachers through the ABS website and showed them useful online statistical tools and activities. We received feedback such as 'This will make teaching statistics easier' and 'I wish I'd known about these [activities] earlier'.



We'll be attending the Mathematical Association of Victoria conference in December so come and say hello. We might even have some stickers to give away.

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7. Recently Released Publications

Physical Activity in Australia: A Snapshot, 2007-08 (cat # 4835.0.55.001)

Do Australian's exercise enough and is lack of exercise affecting our health? Australians are becoming an increasingly sedentary lot due to the types of work and activities we do. In Australia, physical inactivity is the third leading health risk factor for women and the fifth for men. In addition, inactivity is the second leading modifiable health risk factor that contributes to disease and injury.

This publication looks at how the activity levels of Australians have changed over time; how being physically inactive contributes to particular health conditions; and how physical activity can improve an individual's health status. Another area this publication investigates is how a person's employment status, hours worked and type of employment affects their level of physical activity.

Diabetes in Australia: A Snapshot, 2007-08 (cat # 4820.0.55.001)

In Australia, diabetes has increased from 2.4% in 1995 to 3.8% in 2007-8. As well as an actual increase in cases, there are two other factors that could have contributed to the rise. Firstly, the community may have been more aware of symptoms which led to increased check-ups and diagnoses. Secondly, more people may be surviving diabetes as treatments for the disease improve.

In 2007-08, most of the people (88%) who reported they had diabetes had Type 2. Those with Type 1 diabetes accounted for 10% and 2% didn't know what type they had. In addition, 77% of people with Type 2 diabetes were aged 45 years and over when diagnosed whereas nearly 50% of people with Type 1 diabetes were diagnosed between infancy and early adulthood (0-24 years).

Experimental Estimates of Preschool Education (cat # 4240.0)

The publication aims to capture various measures of preschool participation – including hours enrolled, hours attended, geographic area, preschool fees, provision of program by a 4-year qualified teacher – across all states and territories in Australia to inform considerations of the government's 'universal access' goal for preschool education.

Gender Indicators, Australia, Jul 2011 (cat # 4125.0)

This is the first issue of this publication. It contains data about health, safety and justice, work and family balance, economic security, and democracy, governance and citizenship of males and females in Australia. For example, in the section about safety and justice the data shows that Australians are less likely to experience violence as they get older. In addition, there are types of violence that women are more likely to experience than men.

There is also a section about education which contains some interesting statistics. For instance, between 2001 and 2010, more females than males attained Year 12 or a formal qualification at Certificate II or above. During the same period of time, there was an increase of 4.7% in the number of males achieving the abovementioned qualifications compared with an increase of 8.3% for females. However, whilst the percentage for females attaining these qualifications has steadily increased from 2001-2010, the percentage of males fluctuated with decreases in 2003, 2005 and 2006 and then increases to 2010.

Business Use of Information Technology, 2009-10 (cat # 8129.0)

What area of business has experienced the most Internet security incidents or breaches? You'll find the answer to this (Professional, Scientific and Technical Services) and more in this publication. In addition to general information about incidents of breaches, the data also breaks down the impact of security incidents into categories including corruption of hardware or software, corruption or loss of data, downtime of service, and loss of income and staff productivity.

Corrective Services, Australia, Jun 2011 (cat # 4512.0)

This publication provides information on people in custody and those serving community based corrections. The statistics have been assembled from the corrective services agency administrative records of each state and territory, and the Attorney-General's Department information about federal prisoners.

Of the average daily number of full-time prisoners, 93% were male and 7% were female. For those in community based corrections, 82% were male and 18% were female. The rate of community based corrections for males in the June quarter is four times than that of females, and the daily imprisonment rate for men was 13 times more than for females. Aboriginal and Torres Straits Islanders represent 19% of the total amount of people in community based corrections and 26% of full-time prisoners.

Remember, **all** publications available on the **ABS website** are **free** to download.

You can view the full range of previously released publications from the ABS under **Previous Releases**.

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8. Contact Details

How to contact **ABS Education Services**

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